cable drum, first and second cable guides disposed adjacent opposite ends of a lower guide rail in substantially coplanar alignment with a slidable window, and first and second cable lengths having first ends connected to the window at opposite lower corners and second ends engaging the drum. The cables extend from the drum to engage their respective cable guides, and extend therefrom along paths substantially parallel with and above the lower guide rail to reach the window.

The Examiner's rejections of the previously submitted claims were based upon the *Kollar et al.* reference, both by itself and in combination with *Ujihara et al.* reference. Applicant respectfully contends that the above amendment serves to traverse those rejections, as it would not be obvious to combine the *Kollar* and *Ujihara* references to arrive at a sliding window assembly having the configuration now claimed. Neither one of the cited references teaches nor suggests an apparatus for sliding movement of a window wherein cable guides are disposed adjacent opposite ends of a horizontal lower guide rail and in substantially coplanar alignment with the window, and wherein drive cables are engaged by the guides to extend above the guide rail.

The *Kollar* patent discloses a power sliding window assembly intended and adapted for use as an add-on to an existing, non-powered sliding window. It utilizes an essentially self-contained slotted-tape drive unit which mounts to a vehicle immediately below the window opening. Mounting



LAW OFFICES YOUNG & BASILE, P.C., 3001 W. BIG BEAVER ROAD, SUITE 624, TROY, MICHIGAN 48084-3107 (810) 649-3333

brackets 50 are attached to the face of the sliding window pane and connector arms 160, 170, 180, 190 extend downwardly therefrom to slidingly engage a channel member 62 disposed parallel to and below the window frame 32. The loop of drive tape 140 runs along the length of the channel member and is positioned directly below it, engaging lower ends of the connector arms to slide them along the channel member as the tape moves back and forth. When the drive unit is attached to the frame 21 of the truck cab, all of these components project away from the plane of the window and well into the interior of the cab, as is visible in Figures 7, 9 and 12.

The cable drive system of the present invention is, in contrast, adapted for installation in a vehicle as part of the original vehicle equipment rather than as an after-market accessory, and hence is designed to be more fully integrated with the window assembly of the vehicle. Small diameter cables are used, and positioning the cable guides in the claimed fashion causes them to direct the cable lengths along paths directly over the window guide rail. The cables are connected to the window via small attachment blocks that are positioned directly over the window guide rail and travel therealong in the plane of the window, so that no additional guide member of any kind is necessary.

Accordingly, the mechanism has fewer parts than the *Kollar* device and does not project inwardly from the plane of the window and frame by any substantial amount. This is a



LAW OFFICES YOUNG & BASILE, P.C., 3001 W. BIG BEAVER ROAD, SUITE 624, TROY, MICHIGAN 48084-3107 (810) 649-3333

significant advantage because any increase in the thickness of the mechanism forces a vehicle seat within the cab to me moved forward, thereby reducing the amount of leg room available to an occupant or the truck. The use of cables as the linear actuators allows the drive unit 22 to be positioned within the cab at a location remote from the window such that it does not interfere with placement of the seat, as shown in Figure 1.

The *Ujihara* patent discloses a cable drive device for moving a carrier plate 3 and attached window pane upwardly and downwardly along a rail plate 1 mounted within a vehicle door. *Ujihara* does not disclose a window installation having a window guide rail of the type used in a horizontally sliding window, and as such can not be seen as teaching the particular relationship between the guide rail, cable and cable guides which is recited in claim 11.

The claimed drive system has numerous other advantages over the system of *Kollar*. Because the cables are attached to the window at locations directly above the guide rail, at the edges of the pane, rather than to the surface of the pane, no intrusion is made on the glass surface area of the window, known as the "daylight opening." As seen in Figure 2 of *Kollar*, the trim cover 61 which covers attachment brackets 50 and the rest of the guide apparatus extends up to cover the lower portion of both the fixed and sliding window panes. In the automotive industry the size of the daylight opening is considered an important design criterion, for aesthetic reasons



LAW OFFICES YOUNG & BASILE, P.C., 3001 W. BIG BEAVER ROAD, SUITE 624, TROY, MICHIGAN 48084-3107 (810) 649-3333

and also to maximize the drivers field of view. Since the invention drive system has no unsightly mounting brackets or channel members needing to be hidden from view, no trim cover is necessary and the full size of the daylight opening is maintained.

Further, the claimed cable drive configuration results in the cables being attached to the sliding window directly above the guide rail. The cables thus apply their motive tension force to the window directly along the line of motion, so that no torsional forces are applied to the window that would tend to cause binding within the guide rail. This feature contributes to the ability to use a smaller, less powerful and less expensive motor in the drive unit.

Applicant also believes the newly submitted claims correct the deficiencies identified in the rejection under 35 U.S.C. § 112, the claims now being consistently directed toward the combination of a window regulator mechanism and a sliding window assembly.

Applicant believes the above amended claims are also patentable over the window assembly disclosed in the *Buening* patent submitted in the Supplemental Information Disclosure Statement accompanying this Amendment.

According to *Buening*, a sliding window pane 32/132 has four vertically extending pins 54, 55, 62, 63, one disposed at each of its four corners. The pins engage upper and lower guide channels 58, 66 respectively and slide therein as the



LAW OFFICES YOUNG & BASILE, P.C., 3001 W. BIG BEAVER ROAD, SUITE 624, TROY, MICHIGAN 48084-3107 (810) 649-3333

pane moves between its open and closed position. The pane is moved by means of cables attached to the pins at the two lower corners of the pane. When in the closed position, the pane is substantially flush or parallel with the fixed panes on either side (see Figure 2). As the pane begins its sliding movement to the open position, kick-out means urges the sliding pane to a position offset from and parallel to the fixed panes. The guide channels have ramp surfaces 88, 89 (104, 108 in the embodiment of Figure 9A) which extend at an angle to the plane of the windows to allow this offset motion. When the pane returns to its closed position, the kick-out means urges the pane back to its flush position, with the pins seated in the ramp surfaces of the guide channels.

As recited in claim 11, the invention window assembly includes a window which is retained along substantially its entire length in a lower guide rail and linearly slidable therein between the open and closed positions. In *Buening*, only the pins are retained in the guide channels (see Figures 9A, 9B), this being necessary to permit the pane to make its out-of-plane shift when moving into and out of the offset, fully closed position. The *Buening* window assembly could not be modified to have the pane retained along its entire length in the guide channel and still retain the ability of the pane to make an out-of-plane shift, this feature being the essential teaching of the reference.



LAW OFFICES YOUNG & BASILE, P.C., 3001 W. BIG BEAVER ROAD, SUITE 624, TROY, MICHIGAN 48084-3107 (810) 649-3333

Further, the *Buening* window assembly does not meet the limitation recited in claim 11 that the window be linearly slidable between the open and closed positions; the pane of *Buening* moves not in a purely linear path, but makes an out-of-plane shift when it moves between the closed/flush position and the open/offset position.

It is believed that the foregoing amendments place the claims in condition for allowance, and favorable treatment thereof is respectfully requested.

Respectfully submitted,

By: _____

Gary A. Smith (39,376)
Young & Basile, P.C.
3001 W. Big Beaver, Ste. 624
Troy, Michigan 48084
(810) 649-3333

Dated: April 22, 1997

Fax No.: (810) 649-3338

LAW OFFICES YOUNG & BASILE, P.C., 3001 W. BIG BEAVER ROAD, SUITE 624, TROY, MICHIGAN 48084-3107 (810) 649-3333